1,2-DICHLOROETHANE (1,2-DCA)

Also known as: Ethylene dichloride, 1,2-Ethylene dichloride, Freon 150, 1,2-DCA
Chemical reference number (CAS): 107-06-2

WHAT IS 1,2-DICHLOROETHANE?

1,2-DCA is a thick, colorless liquid which has a pleasant odor and sweet taste. It also evaporates quickly. It's used to make vinyl chloride and as a solvent to remove grease and glue. In the home, 1,2-DCA can be found in some cleaning solvents, pesticides, glues, varnishes, and strippers. 1,2-DCA has been found in groundwater and soil near landfills and industries using large chemical quantities.

When 1,2-DCA enters the environment, it can seep into the soil or evaporate into the air. It eventually may reach groundwater and contaminate local drinking water supplies.

HOW ARE PEOPLE EXPOSED TO 1,2-DCA?

Most environmental exposure to 1,2-DCA occur as a result of improper disposal.

Drinking/Eating: People can be exposed to 1,2-DCA when they drink contaminated water. Garden plants do not take up 1,2-DCA when grown in contaminated soil.

Touching: 1,2-DCA can pass through the skin. People can be exposed to 1,2-DCA when they touch contaminated soil, the chemical itself, or bathe in contaminated water.

Breathing: People can inhale 1,2-DCA when working with products containing the chemical. If their water supply is contaminated, people may inhale the chemicals when they bathe or cook with the water.

DO STANDARDS EXIST FOR REGULATING 1,2-DICHLOROETHANE?

Water: The state and federal drinking water standards for 1,2-DCA are both set at 5 parts per billion (ppb). We suggest you stop drinking water that contains more than 5 ppb of 1,2-DCA. If levels of 1,2-DCA are very high in your water, you may also need to avoid washing, bathing, or using the water for other purposes. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for the amount of 1,2-DCA allowed in the air of homes. We use a formula to convert workplace limits to home limits. Based on the formula, we recommend the level of 1,2-DCA in air be no higher than 0.2 parts per million (ppm). Most people can't smell 1,2-DCA until levels reach 6 ppm. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of 1,2-DCA that can be released by industries.

WILL EXPOSURE TO 1,2-DICHLORO-ETHANE RESULT IN HARMFUL HEALTH EFFECTS?

The following symptoms may occur immediately or shortly after exposure to high levels of 1,2-DCA:

- When levels of 1,2-DCA in the air range between 4 and 60 ppm, a person may experience irritation of the mouth, throat, lungs, and nose; nausea, vomiting, headache, and dizziness; and liver and kidney damage.
- Eating or drinking 1,2-DCA can cause damage to the liver, lungs, or kidneys.
- Touching the chemical may cause skin rashes

Health effects of concern after several years of exposure to 1,2-DCA include:

Cancer: Animal studies have shown 1,2-DCA causes stomach, lung, breast, and other types of cancer. 1,2-DCA may also cause cancer in humans.

Reproductive Effects: Animal studies suggest that 1,2-DCA probably doesn't cause birth defects or miscarriages.

Organ Systems: Repeated exposure to 1,2-DCA can cause liver damage, kidney damage, lung injury, loss of appetite, dizziness and nervous system problems.

In general, chemicals affect the same organ systems in all people who are exposed. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO 1,2-DICHLOROETHANE?

Testing can be done to find out whether people have been exposed to 1,2-DCA within the last 24 hours. These tests require special equipment, and the results may not predict what kinds of health effects will follow.

Medical tests of blood chemistry, kidney function, and liver function may be helpful in determining damage and establishing a baseline for later comparison.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-222-1222
- Your local public health agency
- Division of Public Health, BEOH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: http://dhfs.wisconsin.gov/eh

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